

## Pellagra

*By A. M. TOWNSEND, M. D., Nashville, Tenn.*

Notwithstanding many advances have been made in various means for the study of the cause, manifestations, prophylaxis and eradication of diseases, medical science finds itself now almost completely baffled by one of the most mysterious diseases with which it has ever been confronted.

It is a new and grave problem with which the profession in this country is now grappling, and particularly in the South where it is assuming alarming proportions. This strange disease is Pellagra.

The indefinite and pervasive character of its etiology, the vague manifestations of its pathology, with the lack not only of any specific treatment but the apparent inefficacy of all treatment make it indeed the medical mystery of the day. Throughout history it has been a progressively invading disease. Ever since first discovered by Casal in Spain in 1735 investigators have endeavored to determine its cause. It is now the most important topic absorbing the attention of the profession. For Syphilis we have a specific; Tuberculosis can be cured; Dr. Stiles asserts that the Hookworm disease is curable for 57 cents a head, but the cure for Pellagra has baffled the profession for centuries.

With reference to Pellagra in this country two things are evident:—

First, that the disease is extant; and second, that it has existed for some time though unrecognized. Its seeming rapid onset and spread among us may therefore be classed as apparent and not real. Many already existing cases are reported, as knowledge widens and skill in diagnosis develops among those of us hitherto unfamiliar with the disease.

It no doubt is a distinct disease with morbid phenomena peculiar to itself. When the skin lesions of Pellagra are seen one might possibly think of Erythema multiforme, Lichen planus, Eczema and may be Syphilis. But if one keeps in mind the areas covered by the pellagrous eruption, the extent of it, and the anaesthesia associated with it, and the well marked constitutional disturbances associated with it, he can scarcely make a mistake so far as diagnosis is concerned.

The line of greatest research now seems to be in the direction of the etiology of the disease. The investigators are divided into the Zeists and the Antizeists. The Zeists are divided among themselves as to whether the disease is an ordinary intoxication, an auto-intoxication, or a specific infection caused by bacteria, moulds or fungi. The Antizeists are looking for the cause of the disease elsewhere than in the use of diseased

corn. And in view of the present state of uncertainty as to the definite cause of the disease, in my opinion we must still have an open mind.

So far as investigation has proceeded researchers seem to be generally in accord with the Zeists that there is a causal relationship between damaged corn and Pellagra. But they find themselves unable to explain how it is that corn was in use as a food stuff at least 200 years before there was any history of the appearance of Pellagra; how it is that there are large areas where corn is cultivated and largely used as food and yet there exists no Pellagra or vice versa that Pellagra is prevalent in districts where corn is not cultivated and even among persons who have never eaten corn; how it is that only certain members of a family are affected although it be true that all the family live largely on maize; how it is that adults are more susceptible than children; how it is that we find it prevalent in institutions that use no corn as food; or find it prevalent in one institution and not in another when the food stuff in both is furnished by the same mills; why it is that the disease appears in spring and spends its ravages during the summer and gradually abates when the weather becomes cooler; how it is that there is generally no temperature curve; how it is that the rich are the victims as well as the poor, the Caucasian as well as the Negro.

Ever since the diagnosis of Pellagra in a case in consultation with my good friend, Dr. C. V. Roman (which by the way was the first case

of this disease to be reported in this state at least among Negroes), I have been much interested in this disease. Its repulsive and loathsome manifestations have indeed daguerreotyped an impression on my mind that can never be forgotten. I have treated two cases since then and made diagnosis in consultation with Dr. A. L. Thompson, Memphis, Tenn., of the first case reported in that city. All cases I have treated or seen in Negroes have been in females and in each case the only member of the family affected.

I have studied the disease so far as I have been able to secure opportunity in every phase, and must admit that the knowledge of the causation of Pellagra is evidently conjectural. And apropos the vast amount of work that has been done by prominent researchers since the year 1776, I admit that my own practical experience with the disease is too brief and too limited to present my personal observations to have any weight. The cause today seems as remote as at any time in the past and consequently nothing rational in the treatment can be offered.

From Dr. B. G. Tucker, Health Physician of Davidson Co., Tenn., I obtained the following information:—In the Baptist Orphanage (white) Nashville, out of 65 children ranging in age from 4 to 16 years, in the year 1909, there were 17 cases of Pellagra. At the State Asylum there are 900 inmates and not a case of Pellagra has appeared. The food stuff for both these institutions is furnished by the same mills. The

hygienic surroundings at the orphanage are excellent and the children were well nourished. Thirteen of these children have become apparently well, though yet under surveillance suspecting a recurrence with the return of spring. The improvement and apparent cure in these cases are attributed to cleanliness, salt-baths, arsenic and tonics, nutritious diet and open air.

Four of these children died. The autopsy findings in one of them, a boy 12 years of age, as described by Litterer, follows: "Extreme emaciation and absence of adipose tissue. The lungs hypostatic, heart flabby and small, valves normal. Liver enlarged slightly. Spleen three times larger than normal and very dark and friable. Kidneys slightly congested, normal in size and capsule stripped easily. Stomach enlarged and very thin; in places it appeared as if it had no mucous membrane. No blood found in the stomach. In the jejunum, ileum and colon a marked thinning of the mucous membrane. Blood found in the entire intestines. In a few areas the wall of the intestines was so thin that it gave the appearance of an erosion. Fragility of the bones noted on opening the spinal column. Spinal cord showed an inflammation and thickening of the dura mater.

#### MICROSCOPICAL

"1. Lungs hypostatic, congested.

"2. Heart muscle undergoing fatty degeneration in areas, while in others an atrophic change was taking place.

"3. Liver showed cloudy swelling, fatty; also an excessive pigmentation of cells.

"4. Spleen showed a marked hyperplasia and cloudy swelling with some pigmentation of cells.

"5. Stomach and intestines showed a marked thinning of the mucous membrane with congestion of areas.

"6. In the spinal cord was found a degeneration of the posterior column, differing from that of tabes in showing no involvement of posterior roots. There was degeneration of the cells in Clark's column; also changes in the large Betz cells of the anterior horn.

"Cultures were made from heart, blood, liver and spleen with negative results."

The history of an interesting case of mine follows: Mrs. V. L. C., age 29, school teacher. First consulted for a disturbed condition of the bowels. Patient gave history of having had frequent attacks of stomach disorder and diarrhoea for the last two or three years, beginning for the most part in the early spring of each year and growing apparently worse as the summer came on. She was engaged in teaching for nine months in the year in a rural district and her food was of a common quality, the principal articles being bread, some corn bread, and particularly peas.

The symptoms of the first stage of Pellagra so resemble those of ordinary gastro-enteritis that it is hard to make a diagnosis until the second stage is manifest by the appearance of the characteristic erup-

tion. All cases of gastro-enteritis and diarrhoea should then be looked upon with suspicion, especially if they fail to yield to ordinary treatment.

Being personally acquainted with this patient and noting her strangeness of appearance, in loss of flesh and somewhat cachectic, and having had cases under my treatment before this I suspected Pellagra. Examination of the mouth showed redness of the mucous membrane. Later she complained of a sensation of heat in the mouth and stomach and a soreness at each angle of the mouth. There were symptoms of gastric disturbance with pain in the epigastric region. In this case at first there was diarrhoea and at times constipation. Vomiting was a troublesome symptom. For two weeks I treated this case principally symptomatically, with no amelioration of symptoms but rather a progressive aggravation. The diarrhoea became continuous and unyielding, the vomiting increased to the point of intolerance of any nourishment, insomnia was rebellious. I moved her to a local infirmary with hope that a change of surroundings, with hygienic advantages, etc., might be of signal benefit to her. At first she seemed to improve, but in a short time there was a recurrence of the severity of the symptoms mentioned. Soon I noted the appearance of the characteristic erythema which marked the beginning of the second stage. This eruption appeared first on the dorsal portion of both hands, affecting noticeably the joints. Later it appeared on the palmar surface of

the wrist. Patient complained of a burning sensation at the site of this eruption. Soon little bullae appeared filled with serum. Assisted by Dr. J. H. Holman, Professor of Histology, Bacteriology and Microscopy at Meharry Medical College, a close examination of this serum was made and we found it to be a serous inflammatory exudate containing only a few staphylococci and squamous epithelium. The stomatitis increased and the tongue now presented the "bald tongue" appearance. Muscular weakness especially of the lower limbs was marked. There was a staggering gait and marked depression. The temperature was normal.

This patient had a peculiar facial expression at times, and a frown on her forehead as if in the presence of foul odors. She was irritable and melancholic.

The gastric symptoms became persistent and vomiting of great quantities of bile or a bile-like substance became so distressing that it was necessary for me to wash out the stomach each day. We examined also this fluid contents of the stomach and found only a few bacteria, colon bacilli and streptococci. There was a distinct odor to this vomitus. And I might add, there is a peculiar and seemingly characteristic odor that follows pellagrous patients, not unlike the distinct odor of typhus patients as is the opinion of some.

I used every means possible to combat the conditions as they presented themselves but in spite of all, the anaemia increased, the loss of

weight became more apparent, greater physical weakness supervened, the diarrhoea became more intractable, the vomiting more alarming, the nervous phenomena became exaggerated, and a progressive aggravation of all these symptoms soon overtaxed the resistance of my patient and the scene was closed.

While it may be probable that the nervous phenomena are manifested in various ways and to various degrees, perhaps, in the cases that have come under my observation the phenomena have never extended beyond the degree of fatuous melancholia. In no case have I witnessed any suicidal or homicidal tendency.

So summing up, whatever may be the etiology of Pellagra, whether it is more frequent in females or males, in Negroes or whites, whether it is contagious or communicable, the fact yet remains that the medical profession is called upon to grapple with a distinct disease possessing morbid phenomena peculiar to itself. It should then receive the most earnest attention and careful study of all medical men under whose observation and care such cases may perchance fall. It stands in abeyance to treatment from the fact that its etiology is yet obscure and we are yet lost in what means its prophylaxis lies. Every physician is therefore mustered into service for the search of the cause and consequently the prophylaxis and successful treatment of this disease which is producing among us a very uneasy state of feeling, and whose gravity and danger lies in its immediate and

remote consequences not only to the individual but posterity. It seems that when this disease once gains foothold it can not be eradicated. Apparently it is impossible to eradicate it from Italy, Roumania, Austria, and now our own country. The Italian government has spent and is spending large sums of money in teaching the people how to prepare their food, and furnishing them sound corn and good bread, yet it seems difficult to make appreciable progress in the eradication of the disease. When we think of what an easy matter it is to sterilize food products, and when this is done in sections where Pellagra is prevalent and the disease continues to spread, we are forced to think that there is some other cause of infection than through articles of diet.

Who knows but that the tide of opinion may yet be turned and that Pellagra may be found to be an infectious disease, and like tuberculosis its cause be associated with lessened resistance or hereditary predisposition? Or, who knows but that "blind staggers" may be proven to be a manifestation of Pellagra in the horse, whereby, we may have through the horse not only a means of studying more thoroughly the nature of the disease, its causation, prevention and treatment, but also we may obtain from immunized horses a serum for the prevention and cure of the disease?

NOTE:—I have been appointed Chairman of the Commission on "Pellagra among Negroes" to report at the next session of the National

Medical Association, Washington, D. C. I have associated with me Dr. John E. Hunter, Lexington, Ky., and Dr. C. M. Wade, Hot Springs, Arkansas. Dr. Charles W. Stiles, of the Marine Hospital Service at Washington, D. C., before an audience of the City and County Health Officers of Tennessee assembled here April 6, 1910, made the startling statement that "the Negro is the reservoir for disease in the South." This impression is being made everywhere. And herein it seems to me that a strange and somewhat peculiar mission is now being evolved for the Negro physician. This new mission for the Negro physician is to defend his race from the impressions now

being made and the efforts put forth to prove us a menace to society and the nation on the theory that "the Negro is the reservoir for disease in the South." It is therefore imperative on the part of the Negro physician to find out for himself if such charges are true. If true, then work to alleviate them; if false, let the world know it.

You will greatly aid us in the prosecution of our division of the work if you will kindly send to us the reports of any cases of Pellagra you may have on record or under your treatment, or put us in touch with any physician you may know who has a case.

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## Extra-Uterine Gestation

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One of the greatest discoveries man ever made concerning himself, was when Von Baer in 1827 detected the human ovum and established the nature of the human ovary.

As members of the profession we know that the ovum when mature escapes from its follicle in the ovary and falls into the coelomic ostium of the fallopian tube, through which, under favorable environment, it is conveyed by the muscular action of that tube into the uterus.

After the ovum has reached the uterus, if it comes in contact with a spermatozoon, it is thus converted

into an oosperm (better known as a fertilized ovum) and retained within the uterus where it may develop into a foetus and is in due course of time extruded as a living child.

As to the location where the ovum becomes fertilized, there has been a great deal of uncertainty, but at present we have positive proofs that fertilization has taken place in the follicle which is in the ovary, and in the fallopian tube, as well as the cavity of the uterus.

When an oosperm is found in any part of the genital tract other than the cavity of the uterus it is termed

Read in the Division of Surgery of the Lone Star State Medical, Dental and Pharmaceutical Association at the 23rd annual session, held at Houston, Tex., Nov. 9-11, '09.